

# A Descriptive Study to Assess the Knowledge Regarding Deviation in Growth Hormone Among School Going Girls in the Selected Schools of Pune City

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## Abstract

**Introduction:** The deviations in growth hormone is a painful tragedy in teenagers mainly in school going girls.<sup>1</sup> They are very much anxious about their growth and development at this age. It's necessary to know and understand their problems at early stage. Growth hormone is a vital aspect to maintain the balance of mind, body and lifestyle. In the present Indian scenario school going girls are more affected with growth hormone deviations and problems.<sup>1</sup>

**Purpose of the study:** The study aims to assess the knowledge regarding deviation in growth hormones among school going girls in the selected schools of Pune city.

**Material and Methods:** The quantitative research approach was used for this study. The sample size was 200. It included from the selected schools of Pune city of age 12 – 15 years. The knowledge was assessed of each participant. A self – structured questionnaire tool was used to collect the data. The tool was evaluated and validated by 5 experts. The questionnaire consists of demographic section and knowledge section. The demographic section includes age and education and the Knowledge section is divided into Hypothyroidism and Hyperthyroidism each consisting of 10 questions. Analysis was done by using descriptive inferential statistics.

**Results:** The results revealed that in Hypothyroidism, 33.5% of the students have poor knowledge, 66% of students have good knowledge and 0.5% of students have excellent knowledge. In Hyperthyroidism, 54.5% of students have poor knowledge, 45% of students have good knowledge and 0.5% of students have excellent knowledge regarding deviation in growth hormones.

**Conclusion:** In the overall study, regarding the deviation in growth hormones among school going girls showed that the students have more knowledge about the Hypothyroidism (66%) as compared to Hyperthyroidism. Association showed that the Demographic variables of age and education are greater than 0.05, so the association is Non – significant.

**Keywords:** Assess, hypothyroidism, hyperthyroidism, deviation, school going girls.

## Introduction

In the recent era, the deviations in growth hormone are a painful tragedy in teenagers mainly in school going girls.<sup>1</sup> They are very much anxious about their growth and development at this age. It's necessary to know and understand their problems at early stage. Constant evolution in technology magnifies the quality of life mainly in healthcare facility.<sup>2</sup> Growth hormone is a vital aspect to maintain the balance of mind body and lifestyle. In the present Indian scenario school going girls are more affected with growth hormone deviations and problems.<sup>1</sup> The changes in the hormone levels can have a major impact on an individual's growth and overall health.<sup>1</sup> The deviation in growth hormone levels can have an essential impact on the growth and development. Thyroid hormone deviation can also lead to reproductive complications such as menstrual irregularities

infertility and pregnancy. Proper management of thyroid diseases will maintain the reproductive health and ensure a healthy pregnancy.<sup>2</sup> The life of this school going girls is delicate. Serious casualties can arise even with a slight negligence. Their daily experiences make them devious of what is appropriate for them. However further treatment depends on the individual.<sup>1</sup> The segments of different studies suggest the need of health assessment and education to the patients and their families or relatives.<sup>3</sup> The complications listed above are the phases to manage well as to undergo. Enhanced acquaintance towards the disease condition and treatment promotes better selfcare.

### Need of the Study

The Endocrine system helps in hormonal changes in the human body including the growth and development. T3 and T4 are the main thyroid hormones which helps in the metabolism energy formation and tissue growth.<sup>6</sup> They helps to maintain the balance which is leading to growth hormone deviation. Hypothyroidism characterized is insufficient thyroid hormone production in a metabolic state.<sup>8</sup> It occurs at any age which affects in infancy and childhood. But this study is under the age group of 12- 15 years mainly school going girls.<sup>9</sup> In hyperthyroidism the elevated production of thyroid hormone results in the hypermetabolic state.<sup>7</sup> Both the hypothyroidism and hyperthyroidism can disrupt the equilibrium of the hormones influencing in linear growth bone maturation and overall stature.<sup>9</sup> Firstly, the growth disorders such as shortness of growth delayed body development growth problems are mainly observed in individuals with thyroid dysfunction particularly in girls.<sup>6</sup> As incidence rate is very low in school girls, they are not aware regarding the deviations. The girl's info will widen as outcomes of the project about the thyroid hormone deviations. This study aims to understand the knowledge gap and provide valuable insights in the thyroid problems.<sup>4</sup> There are some parents who are not aware about the disease conditions so it will increase the mortality and morbidity rate in children.<sup>10</sup>

### Aim of the Study

The aim of the study was to assess the knowledge regarding deviation in growth hormones among school going girls in the selected schools of Pune city.

### Research Methodology

**Objectives of the study:** to assess the knowledge regarding deviation in Growth hormones among school going girls and to find the association between research findings and demographic variables.

In the research study quantitative research approach is used. Descriptive study survey method is the Research design. The total 200 samples were collected from the school going girls in the selected schools of Pune city. The sampling method was Non probability Purposive sampling. The knowledge is assessed for each of the participants. Poor knowledge is 0-3, Good knowledge is 4-7 and the Excellent knowledge is 8-10. Reliability was conducted on 22/01/2024. The permission taken from the principal of selected school, Pune. Total 20 samples were taken for reliability. Test- retest method was done. Formula used Karls Pearson Corelation Formula. The value of r is 0.803. Pilot study was done on 30 January 2024. Authorization for the data taken from selected school, Pune. Hence, the study is found feasible.

### Research Findings

Result was divided into two sections.

#### Section I: Demographic Data

Research findings depicts,

The age wise distribution of students i.e. majority **48%** belong to the age 15 years, **38 %** students from 14 years, **14 %** students from 13 years and no any students from 12 years. Education wise distribution of students i.e. majority **90 %** students from 9<sup>th</sup> Standard, **10%** students from 8<sup>th</sup> Standard and no any students from 7<sup>th</sup> and 10<sup>th</sup> Standard.

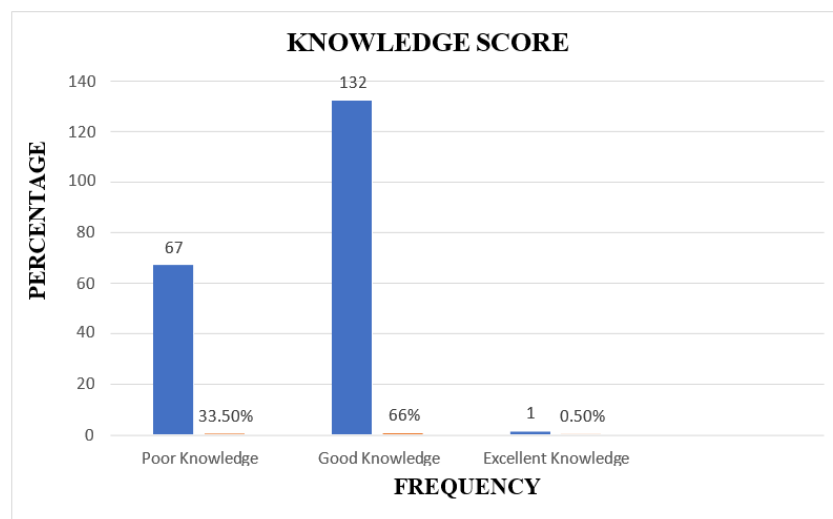
**Section II: Analysis of the data related to the assessment of the knowledge regarding Hypothyroidism.**

n= 200

ASSESSMENT	FREQUENCY	PERCENTAGE	MEAN	S. D
POOR (0- 3)	67	33.5%	4.15	1.58
GOOD (4- 7)	132	66%		
EXCELLENT (8 -10)	1	0.5%		

Research findings depicts,

In hypothyroidism, **33.5 %** of students have Poor knowledge, **66 %** of students have good knowledge and **0.5 %** of students have Excellent Knowledge.



The Bar graph shows the percentage distribution of knowledge assessment of school going girls regarding Hypothyroidism.

**Section III: Analysis of the data related to the assessment of the knowledge regarding Hyperthyroidism.**

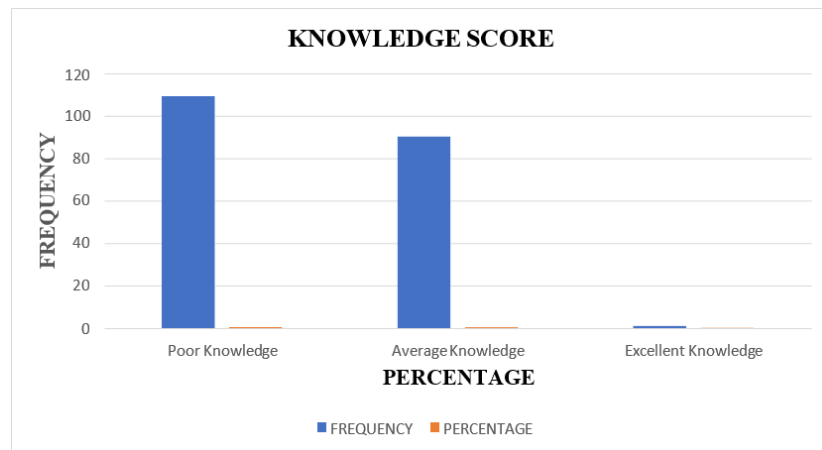
n = 200

ASSESSMENT	FREQUENCY	PERCENTAGE	MEAN	S. D
POOR (0-3)	109	54.5%	3.56	1.50
GOOD (4-7)	90	45%		

EXCELLENT (8-10)	1	0.5%		
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Research findings depicts,

In hyperthyroidism, **54.5 %** of students have Poor knowledge, **45 %** of students have good knowledge and **0.5 %** of students have Excellent Knowledge.



The Bar graph shows the percentage distribution of knowledge assessment of school going girls regarding Hyperthyroidism.

#### Section IV: Association of Demographic variables

The association between selected demographic variables Age and Education status among school going girl's values are greater than 0.05, So the demographic variable is non-significant.

#### Discussion

The present study, was conducted to assess the knowledge regarding deviation in growth hormones among school going girls in the selected schools. Study was conducted with 200 samples and the results showed that students have good knowledge regarding Hypothyroidism and poor knowledge regarding Hyperthyroidism.

There is no similar research on child's knowledge about growth hormone but there are studies on children with hormone deficiencies mainly hypothyroidism. In association of knowledge regarding deviation in growth hormones among school going girls with the demographic variables, results shows that there is no any relation between score of knowledge and demographic variables at 0.05 level of significance. Thus, the study reveals that there is a need to develop the knowledge of school going girls regarding hyperthyroidism. Knowledge of thyroid hormone deviation will help in identifying reproductive complications such as menstrual irregularities infertility and pregnancy.<sup>3</sup>When there is an imbalance in the production it can lead to various conditions, Hypo.thyroidism, Hyper.thyroidism, Hashimoto's thyroiditis, Graves disease, Thyroid nodules, Goitre, Cancer of Thyroid, Thyroid storm, Myxedema and coma.<sup>2</sup> Deviation in this hormone levels can have substantial effect on the individual's growth.<sup>3</sup> Elevated levels of thyroid hormone can result in various medical condition such as Hypothyroidism and Hyperthyroidism.<sup>2</sup> These conditions can lead to abnormal growth patterns bodily changes and various complications.<sup>4</sup> Management and treatment for the Growth hormone deviations involves hormone replacement therapy.<sup>5</sup>

A similar research was conducted where the total of 4,320 schoolchildren aged 10 – 16 years.The results stated that 112 (28.3 %) of them had autoimmune thyroiditis and 396 (9.2 %) of school children had goitre. 14.6 microg/dl overall Median urinary iodine which was slightly lower in the goitrous children 13.3 % and higher in those with both conditions 16.6 %.In this study, 4 (3.6 %) schoolchildren had hyperthyroidism and 8 (7.2 %) schoolchildren had hypothyroidism.

## Conclusion

The study conducted to assess the knowledge regarding deviation in growth hormones among school going girls in the selected schools of Pune city. Problem statement objectives summary majority findings such as demographic profiles and findings related to knowledge assessment of deviation in growth hormones among school going girl's implications nursing practices nursing education. In Hypothyroidism, 33.5% of students have poor knowledge, 66% of students have good knowledge and 0.5% of students have excellent knowledge. In Hyperthyroidism, 54.5% of students have poor knowledge, 45% of students have good knowledge and 0.5% of students have excellent knowledge regarding deviation in growth hormones. In the overall study, students have more knowledge about Hypothyroidism as compared to Hyperthyroidism.

If children have poor knowledge about deviation in growth hormone mainly thyroid hormones, it can further lead to complications like hypothyroidism, hyperthyroidism,

goitre, myxedema, Hashimoto's thyroiditis, Graves disease, Thyroid nodules and Thyroid carcinoma.<sup>2</sup> This will occur at any age which affects in infancy and childhood. Both hypothyroidism and hyperthyroidism can disrupt the equilibrium of hormones influencing in the linear growth bone maturation and overall stature.<sup>6</sup> The growth disorders such as shortness of growth, delayed body development growth problems are mainly observed in the individuals with thyroid dysfunction particularly in girls.<sup>4</sup>

## Recommendation for future research:

A similar study can be conducted on large sample in different setting. A study can be conducted among male regarding growth hormone deviation. A Comparative study can be conducted among male and female to assess the knowledge regarding growth hormone deviation.

## Data study statement:

This study manuscript contains all data generated and analysed during this study.

## Funding:

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## Conflict of interest:

The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

## Ethical approval:

Ethical approval is given by Institutional Research & Recommendation Committee, Bharati Vidyapeeth (Deemed to be University), College of Nursing, Pune.

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